PROBLEM DEFINITION:

Let us define a set of skills possessed by workers in the unorganized/informal sector, S.

S = {Field, Certificate, PaymentMode}

where,

* Field = {JobTitle}, refers to each field of work in the unorganized sector’s skill set.
* Certificate refers to the certificates as proof for that skill.
* PaymentMode refers to the constraints of payment for a specific field of work.
* JobTitle refers to the jobs under each field in the skill set.

Skill set, S has the following properties:

S ≡ ∋(f,jt, cf, pm)

i.e, a skill x can be defined as:

{S(x)} ⇾ hasField(f).S

^hasJobTitle(jt).S

^hasCertificate(cf).S

^hasPayMode(pm).S

We have also defined a general set of person, P defined with certain properties, as:

P ≡ ∋(fn, ln, a, g, ad, ph, m)

i.e, a person x can be defined as:

{P(x)}⇾hasFirstName(fn).P

^hasLastName(ln).P

^hasAge(a).P

^hasGender(g).P

^hasAddress(ad).P

^hasPhoneNumber(ph).P

^hasEmail(m).P

We have defined a set of all workers employed in the unorganized sector, as W, which is derived from the set P and also has the following attributes:

W= {Experience, Competency\_Level, Recommendation, Education, JobTitle}

where,

* JobTitle refers to the job of a worker defined in the skill set.
* Education refers to the highest level of education a worker has received.
* Experience refers to number of years of expertise.
* Recommendation refers to the number of recommendation a worker has got from their previous employers.
* Competency\_Level is a scale to measure how proficient a worker is, in their particular job, and it is defined as –

Competency Level = Recommendation + Experience + Education.

Worker set, W has all the properties defined in Person set, P along with other worker specific properties which are defined as:

W ≡ ∋ (fn, ln, a, g, ad, ph, m, jt, ed, xp, rc, cL )

i.e, a worker can be defined as:

{W(x)} ⇾ hasFirstName(fn).P

^hasLastName(ln).P

^hasAge(a).P

^hasGender(g).P

^hasAddress(ad).P

^hasPhoneNumber(ph).P

^hasEmail(m).P

^hasJobTitle(jt).W

^hasEducation(ed).W

^hasExperience(xp).W

^hasRecommendation(rc).W

^hasCompetencyLevel(cL).W

There is another set of prospective employers of the unorganized sector, E. It also derives all the properties of Person set, P, and also has the following attributes:

E = {JobTitle, Experience, Education, Competency Level}

where,

* JobTitle refers to the job (defined in the skill set) offered by an employer.
* Education refers to the education level of a worker the employer requires.
* Experience refers to number of years of expertise the employer is looking for.
* Competency\_Level refers to the competency level (as defined in worker set) required by the employer.

Employer set has the following properties:

E ≡ ∋ (fn, ln, a, g, ad, ph, m, jt, ed, xp, cL )

i.e, a worker can be defined as:

{W(x)} ⇾ hasFirstName(fn).P

^hasLastName(ln).P

^hasAge(a).P

^hasGender(g).P

^hasAddress(ad).P

^hasPhoneNumber(ph).P

^hasEmail(m).P

^offersJobTitle(jt).E

^requiresEducation(ed).E

^requiresExperience(xp).E

^requiresCompetencyLevel(cL).E

Our task is to find a function that maps the Employer set, E to Worker set, W while relating both the sets, E and W to the set, S where the skill required ( present in set S) by an employer in set E is equivalent to the skill possessed ( present in set S) by a worker in set W, i.e –

offersJobTitle(jt).E = hasJobTitle(jt).W = hasJobTitle(jt).S